

AMENDMENTS TO THE CLAIMS

1-3. (Cancelled)

4. (Currently Amended) A cell analysis and sorting apparatus comprising:

a first channel into which a fluid containing samples is introduced at a sample fluid introduction portion of said first channel, the samples being introduced by a laminar flow into a sample-separating portion from said first channel;

second and third channels arranged symmetrically on both sides of the first channel, a pair of streams of fluid which are made to meet in the sample-separating portion and which contain no samples being introduced into the second and third channels;

means for selecting samples at the sample-separating portion;

a sample recovery channel disposed downstream of the first channel into which the samples are introduced such that the fluid containing a sample selected from the sample-selecting portion flows out in a laminar flow; and

a pair of fluid passages which are arranged symmetrically on both sides of the sample recovery channel and into which unwanted samples are discharged;

wherein said first channel and said sample recovery channel are arranged to control a flow velocity of the fluid is controlled according to the a difference between the a height of the a liquid surface of the fluid introduced into in said sample fluid introduction portion of said first channel and the a height of the a liquid surface in the sample recovery channel downstream of the sample-separating portion.

5. (Previously Presented) The cell analysis and sorting apparatus of claim 4, wherein the sample-separating portion is equipped with external force introduction means for introducing an external force to unwanted samples to be discharged.

6. (Currently Amended) The cell analysis and sorting apparatus of claim 4, wherein at least one stereoscopic microscope image and one fluorescent microscope image are made to correspond to each other at the same time by referring to their mutual comparing a relative

positional relationship of the stereoscopic microscope image and the fluorescent microscope image when the channel into which a fluid containing samples is introduced is observed with an optical microscope.

7. (Currently Amended) A cell sorting and analysis system using comprising: a cell analysis and sorting apparatus of claim 4; and an optical microscope, wherein a stereoscopic microscope image in at least one wavelength region of samples within said first channel of the cell analysis and sorting apparatus and a fluorescent microscope image in at least one wavelength region of the samples within the channels of the cell analysis and sorting apparatus using exciting light of a certain wavelength are observed with an observation lens fitted to the optical microscope, and wherein the samples are analyzed and sorted by comparing and analyzing data about corresponding to the obtained stereoscopic microscope image and data about corresponding to an observed image owing to the fluorescent microscope image.

8. (Currently Amended) The cell analysis and sorting system of claim 7, wherein observed images of plural different optical wavelengths obtained by the observation lens are focused onto the a photosensitive surface of an observational camera fitted to one optical microscope, and wherein data about corresponding to the obtained focused images are compared and analyzed, whereby the samples are analyzed and sorted.

9. (Currently Amended) The cell analysis and sorting apparatus of claim 5, wherein at least one stereoscopic microscope image and one fluorescent microscope image are made to correspond to each other at the same time by referring to their mutual comparing a relative positional relationship of the stereoscopic microscope image and the fluorescent microscope image when the channel into which a fluid containing samples is introduced is observed with an optical microscope.

10. (Currently Amended) A cell sorting and analysis system using comprising:

a cell analysis and sorting apparatus of claim 5; and
an optical microscope, wherein a stereoscopic microscope image in at least one wavelength region of samples within said first channel of the cell analysis and sorting apparatus and a fluorescent microscope image in at least one wavelength region of the samples within the channels of the cell analysis and sorting apparatus using exciting light of a certain wavelength are observed with an observation lens fitted to the optical microscope, and wherein the samples are analyzed and sorted by comparing and analyzing data about corresponding to the obtained stereoscopic microscope image and data about corresponding to an observed image owing to the fluorescent microscope image.

11. (Currently Amended) A cell sorting and analysis system ~~using comprising:~~
a cell analysis and sorting apparatus of claim 6; and
an optical microscope, wherein a stereoscopic microscope image in at least one wavelength region of samples within said first channel of the cell analysis and sorting apparatus and a fluorescent microscope image in at least one wavelength region of the samples within the channels of the cell analysis and sorting apparatus using exciting light of a certain wavelength are observed with an observation lens fitted to the optical microscope, and wherein the samples are analyzed and sorted by comparing and analyzing data about corresponding to the obtained stereoscopic microscope image and data about corresponding to an observed image owing to the fluorescent microscope image.

12. (Currently Amended) The cell analysis and sorting system of claim 11, wherein observed images of plural different optical wavelengths obtained by the observation lens are focused onto the ~~a~~ photosensitive surface of an observational camera fitted to one optical microscope, and wherein data about corresponding to the obtained focused images are compared and analyzed, whereby the samples are analyzed and sorted.

13. (Currently Amended) A cell sorting and analysis system ~~using comprising:~~
a cell analysis and sorting apparatus of claim 9; and

an optical microscope, wherein a stereoscopic microscope image in at least one wavelength region of samples within said first channel of the cell analysis and sorting apparatus and a fluorescent microscope image in at least one wavelength region of the samples within the channels of the cell analysis and sorting apparatus using exciting light of a certain wavelength are observed with an observation lens fitted to the optical microscope, and wherein the samples are analyzed and sorted by comparing and analyzing data about corresponding to the obtained stereoscopic microscope image and data about corresponding to an observed image owing to the fluorescent microscope image.

14. (Currently Amended) The cell analysis and sorting system of claim 13, wherein observed images of plural different optical wavelengths obtained by the observation lens are focused onto ~~the~~ a photosensitive surface of an observational camera fitted to one optical microscope, and wherein data about corresponding to the obtained focused images are compared and analyzed, whereby the samples are analyzed and sorted.

15. (Currently Amended) The cell analysis and sorting system of claim 10, wherein observed images of plural different optical wavelengths obtained by the observation lens are focused onto ~~the~~ a photosensitive surface of an observational camera fitted to one optical microscope, and wherein data about corresponding to the obtained focused images are compared and analyzed, whereby the samples are analyzed and sorted.

16. (New) The cell analysis and sorting apparatus according to claim 4, wherein said second and third channels have a same cross-sectional area, and wherein said pair of fluid passages have a same cross-sectional area.